

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars:

1. Amendments and Support for Same

By the Response, claims 1 and 9 have been amended to more particularly point out and distinctly claim the subject matter of the invention. Claim 1 has been amended to refer to perspective characteristics rather than geometric characteristics, which is consistent with the claim language of corresponding foreign application PCT/GB2004/0023269, which has matured as granted UK patent. Support for the amended feature can be found throughout the original specification.

Further, claim 1 has also been amended to refer to one or more surfaces, rather than just one surface. According to the original disclosure it is clear that the principles of the invention may be applied to one or more surfaces in a single image.

Claim 1 has also been amended to refer to substantially planar surfaces. Support for the amended feature can be found in, e.g., page 4 line 2 of the original specification.

Claim 1 has also been amended to specify that the apparatus comprises a visualisation module configured to display a digital image of a photograph of said one or more surfaces with said template devices in situ, and to enable a user to delineate in the displayed image an outline of each of the one or more surfaces, and thereby select a region of the image which corresponds to each of the one or more surfaces. Support for the amended features can be found in, e.g., the third paragraph in page 6 of the specification as filed.

With respect to the introduction of the terms visualisation module and mapping module into claim 1, the amended features will be discussed in more detail below with regard to the 35 U.S.C. §112, 1st and 2nd paragraphs, rejection.

New dependent claim 10 has been added to further complete the scope to which Applicant is entitled. Particularly, claim 10 specifies that the mapping module is configured to determine provisional perspective characteristics from the template markings, to select line segments from the outline delineated by the user for that surface based on said provisional perspective characteristics, and to identify the

perspective characteristics with higher accuracy based on said selected line segments. Support for the features recited in claim 10 can be found in, e.g., paragraph bridging pages 7 and 8 of the specification.

Independent claim 9 directed to a method has been amended to parallel the system recited in amended independent claim 1.

No new matter has been added in the pending claims. Accordingly, claims 1 and 3-10 are respectfully submitted for consideration. Approval and entry of the amendments are respectfully requested.

2. Objection to the Specification

With respect to the objection to the specification, Applicant has amended claim 9 to delete all features lacking proper antecedent basis and support in the specification. Further, claim 1 has been amended to direct to a system for defining selected perspective characteristics of one or more substantially planar surfaces, and claim 9 has been amended to direct to a method of mapping substantially planar surfaces. Notwithstanding the amendments, Applicant respectfully notes that the principles of the invention could be applied to any substantially planar surface, irrespective of its outline. In particular, we would submit that the surface does not need to have a rectangular outline.

Moreover, the template is aligned with the vertical and horizontal edges of a rectangular wall surface. However, this description is intended merely as an exemplary implementation of the invention. It would be readily apparent to the skilled person how to orientate a template device horizontally and vertically in the absence of defined horizontal and vertical reference lines, either judging by eye, or using a well known tool, such as a spirit level.

Moreover, Applicant respectfully submits that, according to the presently claimed invention, during the image processing stage, the perspective characteristics of the surface are initially derived from the markings on the template device, which are independent of the outline of the surface. As explained more fully on pages 7-8 of the specification as filed, outline segments, which appear to project towards the vanish point derived from the template markings, are used to refine the vanishing point data. However, it is clearly understood that some or all of the outline segments might not converge on the provisional vanishing points, as discussed in page 8, lines

3-7 of the specification. Accordingly, the invention is not limited to rectangular surfaces, where all four edges would inevitably project towards the provisional vanishing point calculated from the template markings.

Further, it is also clear from the above-mentioned section of the specification that it is not essential for the provisional vanishing points calculated from the template markings to be refined by reference to any outline segments, because the perspective of the surface could be derived directly from the provisional vanishing point data. Accordingly, the principles of the invention could be applied to surfaces where none of the outline segments project towards the vanishing points calculated from the template markings. Therefore, in view of the above, Applicant respectfully submits that it is clear from the specification that the principles of the invention could be applied to surfaces with an irregular, or even curved outline, provided that the surface is substantially planar, as required by the amended claims.

In view of the amendments to the specification, Applicant respectfully requests reconsideration and withdrawal of the objection to the specification.

3. Claim rejections under 35 U.S.C. §112, 1st and 2nd paragraph

With respect to the rejection of claims 1 and 3-7 under 35 U.S.C. §112, 1st and 2nd paragraph, Applicant has amended claim 1 as a system comprising a template device, a visualisation module and a mapping module. In view of the amendments and arguments set forth above, Applicant respectfully requests reconsideration and withdrawal of the §112, 1st and 2nd paragraph, rejections of claims 1 and 3-7.

4. Rejection under 35 U.S.C. §102(e)

With respect to the rejection of claims 1, 3, 6, and 9 under 35 U.S.C. §102(e) as being anticipated by Petrich (US 2003/0002730), Applicant respectfully traverses the rejection at least for the reason that Petrich fails to describe each and every limitation recited in the rejected claims.

As shown above, independent claim 1 has been amended to recite a visualization module configured to enable the user delineates the outline of one or more surfaces in the image and thereby selects a region of the image which corresponds to each of one or more surfaces. Further, the system includes a mapping module which determines perspective characteristics of the surface(s) based on the

template device markings, and then changes the appearance of the selected region(s) of the image in accordance with the perspective characteristics of the respective surfaces.

Method claim 9, which parallel system claim 1, has been amended to recite the process accomplished by the claimed modules in the system of claim 1.

In contrast, Petrich generally describes a system in which a three-dimensional “target device” is photographed next to a subject against a blue-screen background, to allow lighting, perspective, and scale characteristics to be derived. This allows an appropriate background scene image to be selected to replace the blue-screen background, so that the resulting composite image appears realistic.

Applicant respectfully asserts that at no point in Petrich are specific surfaces of the blue-screen backdrop delineated in the image of the scene so that their perspective characteristics can be individually determined and their appearance changed accordingly. Moreover, taking such a step would not be obvious in the context of Petrich, as the surfaces defined by the backdrop are entirely unrelated to the surfaces which may appear in the replacement background scene. For example, see Fig. 1 of Petrich, where the vertical surface of the blue-screen background is replaced by an image of the horizon.

Consequently, since each and every feature of the present claims is not taught (and is not inherent) in Petrich, as is required by MPEP Chapter 2131 in order to establish anticipation, the rejection of claims 1, 3-6, and 9, under 35 U.S.C. §102(e), as anticipated by Petrich is improper.

In view of the amendment and arguments set forth above, Applicant respectfully requests reconsideration and withdrawal of the §102(b) rejection of independent claims 1 and 9 and dependent claim 3-6.

5. Rejections under 35 U.S.C. §103(a)

With respect to the rejection of claim 7 under 35 U.S.C. §103(a) as being unpatentable over Petrich in view of Kumar (US 5,982,383), Applicant respectfully traverses the rejection at least for the reasons set forth above in relation to the §102(e) rejection of independent claim 1, and for the reason that Petrich and Kumar, combined or separately, fail to teach, disclose, or suggest all of the limitation recited in the rejected claims. Similar to Petrich, Kumar also fails to teach, disclose, or

suggest at least visualization module and mapping module recited in Applicant's amended claim 1.

In view of the amendment and arguments set forth above, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection of claim 7.

6. Conclusion

In view of the amendments to the claims, and in further view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is requested that claims 1 and 3-10 be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicant's representative, the Examiner is invited to contact the undersigned at the numbers shown.

Further, while no fees are believed to be due, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-4525.

Respectfully submitted,

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